UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,160	06/20/2003	Mari Takahashi	03368/HG	8962

1933 7590 03/13/2006

FRISHAUF, HOLTZ, GOODMAN & CHICK, PC
220 Fifth Avenue
16TH Floor
NEW YORK, NY 10001-7708

EXAMINER	
SHOSHO, CALLIE E	

ART UNIT	PAPER NUMBER
1714	

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/600,160	TAKAHASHI ET AL.	
	Examiner	Art Unit	
	Callie E. Shosho	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) *23-37* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/11/03,11/21/03,* 5/10/05.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction Requirement

1. Applicant's election of Group I, claims 1-22 in the reply filed on 12/21/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Claims 23-37 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12/21/05.

Election of Species

3. Applicant's election of species General Formula (1-4), i.e. substituent X, species General Formula (2-3), i.e. substituent B, and species General Formula (4), i.e. substituent G, in the reply filed on 12/21/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-22 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for dye wherein each of R_2, R_3, and R_a is a substituent that is halogen, alkyl group, cycloalkyl group, aralkyl group, aryl group, heterocyclic group, alkoxy group, aryloxy group, acylamino group, sulfonylamino group, ureido group, alkylthio group, arylthio group, alkoxycarbonyl group, carbamoyl group, sulfamoyl group, sulfonyl group, acyl group, cyano group, amino group, sulfonic acid group, or carboxylic acid group, does not reasonably provide enablement for any type of substituent. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims.

Case law holds that applicant's specification must be "commensurately enabling [regarding the scope of the claims]" *Ex Parte Kung*, 17 USPQ2d 1545, 1547 (Bd. Pat. App. Inter. 1990). Otherwise **undue experimentation** would be involved in determining how to practice and use applicant's invention. The test for undue experimentation as to whether or not all compounds within the scope of claims 1-22 can be used as claimed and whether claims 1-22 meet the test is stated in *Ex parte Forman*, 230 USPQ 546, 547 (Bd. Pat. App. Inter. 1986) and *In re Wands*, 8 USPQ2d 1400, 1404 (Fed.Cir. 1988). Upon applying this test to claims 1-22, it is believed that undue experimentation **would** be required because:

(a) *The quantity of experimentation necessary* is **great** since claims 1-22 read on dye wherein R_2, R_3, and R_a are each any type of substituent such as sulfonamide group, amido group, nitro group, etc.

(b) There is **no** *direction or guidance presented* for making a colored dispersion comprising dye wherein R_2, R_3, and R_a are each any type of substituent such as sulfonamide group, amido group, nitro group, etc.

(c) There is an ***absence of working examples*** concerning making a colored dispersion comprising dye wherein R_2, R_3, and R_a are each any type of substituent such as sulfonamide group, amido group, nitro group, etc.

In light of the above factors, it is seen that undue experimentation would be necessary to make and use the invention of claims 1-22.

6. Claim 19 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for fade preventing group wherein R_{102}-R_{106} are each non-metallic substituent that is $-X_{101}$-R_{101}, alkyl group, alkenyl group, aryl group, heterocyclic group, alkoxycarbonyl group, aryloxycarbonyl group, halogen atom, acyl group, acylamino group, sulfonyl group, carbamoyl group, sulfamoyl group, cyano group, nitro group, sulfo group, or carboxyl group, does not reasonably provide enablement for R_{102}-R_{106} that is any type of non-metallic substituent. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims.

Case law holds that applicant's specification must be "commensurately enabling [regarding the scope of the claims]" *Ex Parte Kung*, 17 USPQ2d 1545, 1547 (Bd. Pat. App. Inter. 1990). Otherwise **undue experimentation** would be involved in determining how to practice and use applicant's invention. The test for undue experimentation as to whether or not all compounds within the scope of claim 19 can be used as claimed and whether claim 19 meets the test is stated in *Ex parte Forman*, 230 USPQ 546, 547 (Bd. Pat. App. Inter. 1986) and *In re Wands*, 8 USPQ2d 1400, 1404 (Fed.Cir. 1988). Upon applying this test to claim 19, it is believed that undue experimentation **would** be required because:

(a) *The quantity of experimentation necessary* is **great** since claim 19 reads on fade preventing groups wherein R_{102}-R_{106} are each any type of non-metallic substituent such as ureido, sulfonamide, hydroxyl, etc.

(b) There is **no** *direction or guidance presented* for making a colored dispersion comprising fade preventing groups wherein R_{102}-R_{106} are each any type of non-metallic substituent such as ureido, sulfonamide, hydroxyl, etc.

(c) There is an ***absence*** *of working examples* concerning making a colored dispersion comprising fade preventing groups wherein R_{102}-R_{106} are each any type of non-metallic substituent such as ureido, sulfonamide, hydroxyl, etc.

In light of the above factors, it is seen that undue experimentation would be necessary to make and use the invention of claim 19.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 9 and 11-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Claim 9 and claim 13 each recite that R_b is a "substituent". The scope of each the claims is confusing because it is not clear what is meant by substituent or what types of groups it encompasses.

Similar confusion arises with respect to claim 14 that recites that each of R_7, R_8, and R_9 is a "substituent".

(b) Claim 18 discloses dye of formula A-$(L\text{-}G)_q$ wherein A is "a residue of a dye represented by General Formula (1)". The scope of the claim is confusing given that there is no disclosure of General Formula (1) and thus, it is not clear what dye is being claimed.

NOTE: With respect to the rejections of record, it is noted that A was considered as the residue of a dye of General Formula (I) as found in claim 1.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

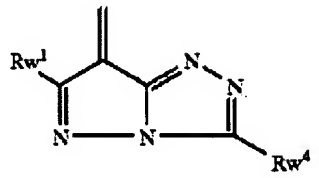
The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

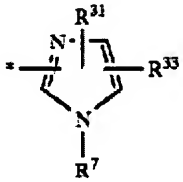
10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soeda et al. (U.S. 5,916,721).

Soeda et al. disclose colored dispersion comprising binder resin and dye of the formula A=N-B wherein A is of the formula :



wherein Rw^4 is hydrogen or substituent such as alkyl group, aryl group, etc. and Rw^1 is hydrogen or substituent such as alkyl group, alkoxy group, aryl group, etc. and B is of the formula:



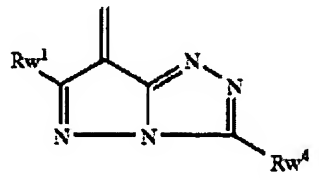
wherein R^{33} includes OR^{34} wherein R^{34} is hydrogen, R^7 is alkyl group or aryl group, and R^{31} includes hydroxy group (col.2, lines 15-19 and 26-40, col.3, lines 23-30, col.4, lines 18-19, col.7, lines 35-66, col.11, lines 24-35, col.15, lines 34-40, and col.17, lines 19-30). Given that Soeda et al. disclose that B is substituted with at least one hydrogen bonding group, i.e. –OH, it is clear that this group would intrinsically form a hydrogen bond with the nitrogen atom in either of the A or B substituent as presently claimed.

While Soeda et al. fails to exemplify the presently claimed colored dispersion, i.e. comprising specific dye as presently claimed, nor can the claimed colored dispersion be "clearly envisaged" from Soeda et al. as required to meet the standard of anticipation (cf. MPEP 2131.03), nevertheless, in light of the overlap between the claimed colored dispersion and the

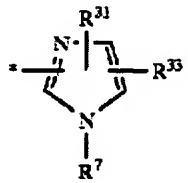
colored dispersion disclosed by colored dispersion, it is urged that it would have been within the bounds of routine experimentation, as well as the skill level of one of ordinary skill in the art, to use colored dispersion which is both disclosed by Soeda et al. and encompassed within the scope of the present claims and thereby arrive at the claimed invention.

12. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soeda et al. (U.S. 5,916,721) in view of Mikoshiba et al. (U.S. 5,262,377).

Soeda et al. disclose colored dispersion comprising binder resin and dye of the formula A=N-B wherein A is of the formula :



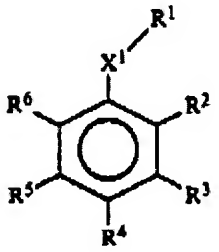
wherein Rw^4 is hydrogen or substituent such as alkyl group, aryl group, etc. and Rw^1 is hydrogen or substituent such as alkyl group, alkoxy group, aryl group, etc. and B is of the formula:



wherein R^{33} includes OR^{34} wherein R^{34} is hydrogen, R^7 is alkyl group or aryl group, and R^{31} includes hydroxy group (col.2, lines 15-19 and 26-40, col.3, lines 23-30, col.4, lines 18-19, col.7, lines 35-66, col.11, lines 24-35, col.15, lines 34-40, and col.17, lines 19-30).

The difference between Soeda et al. and the present claimed invention is the requirement in the claims that the dye has attached fade preventing group.

Mikoshiba et al. disclose the use of dye of the formula $A-(L-B)_q$ wherein A is dye residue including azomethine dye, L is divalent linking group, and B is group which has effect of suppressing fading of the dye. It is disclosed that B includes group of the formula:



wherein X^1 is –O-, -S-, or NR^{31} wherein R^{31} is hydrogen, alkyl group, or aryl group, R^1 is hydrogen, alkyl group, aryl group, alkenyl group, heterocyclic group, silyl group, or phosphino group, and R^2-R^6 are each hydrogen or non-metal substituent. The motivation for attaching such group to a dye is produce image that exhibits no color fading (col.1, lines 9-14, col.4, lines 14-26, col.11, lines 37-50, and col.12, lines 31-35).

In light of the motivation for attaching group which has effect of suppressing fading of the dye disclosed by Mikoshiba et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to attach such group to the dye of Soeda et al. in order to

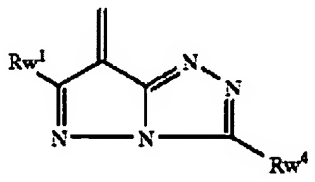
produce colored dispersion whose color does not fade, and thereby arrive at the claimed invention.

13. Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (U.S. 5,936,008) in view of Soeda et al. (U.S. 5,916,721).

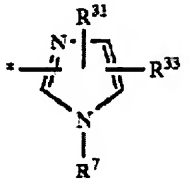
Jones et al. disclose ink jet ink comprising colored dispersion, i.e. colored toner comprising resin and dye, as well as ink jet method comprising ejecting the ink onto substrate (col.1, lines 5-12, col.4, lines 65-67, col.5, lines 9-11, col.7, lines 34-49, and col.11, line 61-col.12, line 4).

The difference between Jones et al. and the present claimed invention is the requirement in the claims of specific dye.

Soeda et al., which is drawn to colored toner disclose colored dispersion comprising binder resin and dye, disclose the use of dye of the formula A=N-B wherein A is of the formula :



wherein Rw^4 is hydrogen or substituent such as alkyl group, aryl group, etc. and Rw^1 is hydrogen or substituent such as alkyl group, alkoxy group, aryl group, etc. and B is of the formula:



wherein R^{33} includes OR^{34} wherein R^{34} is hydrogen, R^7 is alkyl group or aryl group, and R^{31} includes hydroxy group. The motivation for using such dye is to produce image with excellent lightfastness, high saturation, and small variation in hue (col.2, lines 15-19 and 26-40, col.3, lines 23-30, col.4, lines 18-19, col.7, lines 35-66, col.11, lines 24-35, col.15, lines 34-40, and col.17, lines 19-30).

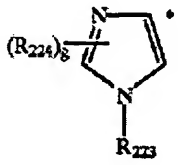
In light of the motivation for using specific dye disclosed by Soeda et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such dye in the colored dispersion of the ink jet ink of Jones et al. in order to produce image with excellent lightfastness, high saturation, and small variation in hue, and thereby arrive at the claimed invention.

14. Claims 1-8, 14-17, and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsutsumi et al. (U.S. 6,031,019) in view of Ohya et al. (U.S. 6,344,075).

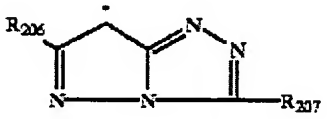
Tsutsumi et al. disclose colored polymer dispersion comprising polymer and dye. Tsutsumi et al. also disclose ink jet ink comprising the colored dispersion and ink jet printing method wherein the ink is ejected onto substrate (col.1, lines 4-24, col.3, line 65-col.4, line 22, and col.14, lines 40-45).

The difference between Tsutsumi et al. and the present claimed invention is the requirement in the claims of specific dye.

Ohya et al., which is drawn to ink jet ink, disclose the use of dye of the formula A_2-D_2=B_2 wherein A_2 is of the formula:



wherein R_{223} is hydrogen, alkyl, or aryl and R_{224} is alkyl, B_2 is of the formula:



wherein R_{206} and R_{207} are each alkyl, aryl, or heterocyclic group, and D_2 is N or $-C(R_1)$. The motivation for using such dye is that the dye has excellent lightfastness (col.2, lines 15-16, col.3, lines 10-67, col.33, lines 54-60, col.34, lines 10-15, col.34, line 66-col.35, line 17, col.36, lines 1-8, col.37, lines 38-58, col.38, lines 4-6, col.43, line 40, and col.50, lines 35-60).

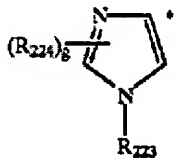
In light of the motivation for using specific dye disclosed by Ohya et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such dye in Tsutsumi et al. in order to produce color dispersion as well as image with excellent lightfastness, and thereby arrive at the claimed invention.

15. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsutsumi et al. (U.S. 6,031,019) in view of Ohya et al. (U.S. 6,344,075) and Mikoshiba et al. (U.S. 5,262,377).

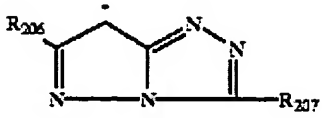
Tsutsumi et al. disclose colored polymer dispersion comprising polymer and dye (col.1, lines 4-24, col.3, line 65-col.4, line 22, and col.14, lines 40-45).

The difference between Tsutsumi et al. and the present claimed invention is the requirement in the claims of specific dye.

Ohya et al., which is drawn to ink jet ink, disclose the use of dye of the formula A_2-D_2=B_2 wherein A_2 is of the formula:



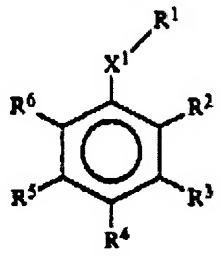
wherein R_{223} is hydrogen, alkyl, or aryl and R_{224} is alkyl, B_2 is of the formula:



wherein R_{206} and R_{207} are each alkyl, aryl, or heterocyclic group, and D_2 is N or $-C(R_1)$. The motivation for using such dye is that the dye has excellent lightfastness (col.2, lines 15-16, col.3,

lines 10-67, col.33, lines 54-60, col.34, lines 10-15, col.34, line 66-col.35, line 17, col.36, lines 1-8, col.37, lines 38-58, col.38, lines 4-6, col.43, line 40, and col.50, lines 35-60).

Mikoshiba et al. disclose the use of dye of the formula A-(L-B)$_q$ wherein A is dye residue including azomethine dye, L is divalent linking group, and B is group which has effect of suppressing fading of the dye. It is disclosed that B includes group of the formula:



wherein X^1 is –O-, -S-, or NR^{31} wherein R^{31} is hydrogen, alkyl group, or aryl group, R^1 is hydrogen, alkyl group, aryl group, alkenyl group, heterocyclic group, silyl group, or phosphino group, and R^2-R^6 are each hydrogen or non-metal substituent. The motivation for attaching such group to a dye is produce image that exhibits no color fading (col.1, lines 9-14, col.4, lines 14-26, col.11, lines 37-50, and col.12, lines 31-35).

In light of the motivation for using specific dye disclosed by Ohya et al. as described above and for attaching group to the dye which has effect of suppressing fading of the dye disclosed by Mikoshiba et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such dye with such attached group in Tsutsumi et al. in order to produce colored dispersion with excellent lightfastness whose color does not fade, and thereby arrive at the claimed invention.

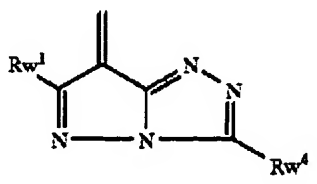
16. Claims 1-17 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ninomiya et al. (U.S. 2003/0008942) or Ando et al. (U.S. 6,777,463) either of which in view of Soeda et al. (U.S. 5,916,721).

Ninomiya et al. disclose dispersion of colored particles comprising core-forming polymer containing dye and shell forming polymer that encapsulates the core-forming polymer. Ninomiya et al. also disclose ink comprising the colored dispersion and ink jet method comprising ejecting the ink onto substrate (paragraphs 8-10, 13, 45-46, 49, 74, and 91).

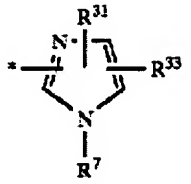
Alternatively, Ando et al. disclose polymer dispersion comprising water and polymer particles having core part and shell part wherein the core part comprises colorant containing polymer and shell part comprises colorant-containing polymer. Ando et al. also disclose ink comprising the colored dispersion and ink jet method comprising ejecting the ink onto substrate (col.3, line 56-col.4, line 14, col.4, lines 18-21, and col.9, lines 12-16).

The difference between Ninomiya et al. or Ando et al. and the present claimed invention is the requirement in the claims of specific dye.

Soeda et al., which is drawn to colored toner disclose colored dispersion comprising binder resin and dye, disclose the use of dye of the formula A=N-B wherein A is of the formula :



wherein Rw^4 is hydrogen or substituent such as alkyl group, aryl group, etc. and Rw^1 is hydrogen or substituent such as alkyl group, alkoxy group, aryl group, etc. and B is of the formula:



wherein R^{33} includes OR^{34} wherein R^{34} is hydrogen, R^7 is alkyl group or aryl group, and R^{31} includes hydroxy group. The motivation for using such dye is to produce image with excellent lightfastness, high saturation, and small variation in hue (col.2, lines 15-19 and 26-40, col.3, lines 23-30, col.4, lines 18-19, col.7, lines 35-66, col.11, lines 24-35, col.15, lines 34-40, and co.17, lines 19-30). Given that Soeda et al. disclose that B is substituted with at least one hydrogen bonding group, i.e. –OH, it is clear that this group would intrinsically form a hydrogen bond with the nitrogen atom in either of the A or B substituent as presently claimed.

In light of the motivation for using specific dye disclosed by Soeda et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such dye in the colored dispersion of either Ninomiya et al. or Ando et al. in order to produce image with excellent lightfastness, high saturation, and small variation in hue, and thereby arrive at the claimed invention.

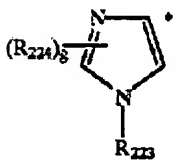
17. Claims 1-8, 14-17, and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ninomiya et al. (U.S. 2003/0008942) or Ando et al. (U.S. 6,777,463) either of which in view of Ohya et al. (U.S. 6,344,075).

Ninomiya et al. disclose dispersion of colored particles comprising core-forming polymer containing dye and shell forming polymer that encapsulates the core-forming polymer. Ninomiya et al. also disclose ink comprising the colored dispersion and ink jet method comprising ejecting the ink onto substrate (paragraphs 8-10, 13, 45-46, 49, 74, and 91).

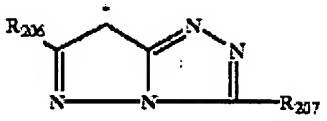
Alternatively, Ando et al. disclose polymer dispersion comprising water and polymer particles having core part and shell part wherein the core part comprises colorant containing polymer and shell part comprises colorant-containing polymer. Ando et al. also disclose ink comprising the colored dispersion and ink jet method comprising ejecting the ink onto substrate (col.3, line 56-col.4, line 14, col.4, lines 18-21, and col.9, lines 12-16).

The difference between Ninomiya et al. or Ando et al. and the present claimed invention is the requirement in the claims of specific dye.

Ohya et al., which is drawn to ink jet ink, disclose the use of dye of the formula A_2-D_2=B_2 wherein A_2 is of the formula:



wherein R_{223} is hydrogen, alkyl, or aryl and R_{224} is alkyl, B_2 is of the formula:



wherein R_{206} and R_{207} are each alkyl, aryl, or heterocyclic group, and D_2 is N or $-C(R_1)$. The motivation for using such dye is that the dye has excellent lightfastness (col.2, lines 15-16, col.3, lines 10-67, col.33, lines 54-60, col.34, lines 10-15, col.34, line 66-col.35, line 17, col.36, lines 1-8, col.37, lines 38-58, col.38, lines 4-6, col.43, line 40, and col.50, lines 35-60).

In light of the motivation for using specific dye disclosed by Ohya et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such dye in either Ninomiya et al. or Ando et al. in order to produce image with excellent lightfastness, and thereby arrive at the claimed invention.

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nakayama et al. (U.S. 5,858,617) disclose dye as presently claimed, however, there is no disclosure of colored dispersion as presently claimed.

JP 2001-294770, Yamanouchi et al. (U.S. 2002/0143079), and Ishizuka et al. (U.S. 2002/0032252) each disclose colored dispersion comprising polymer and dye, however, in light of the species election set forth by applicants (see paragraph 3 above), none of the references disclose dye as required in the present claims as a result of the species election. Further, there is no disclosure of fade preventing group as required in present claim 18.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
3/5/06